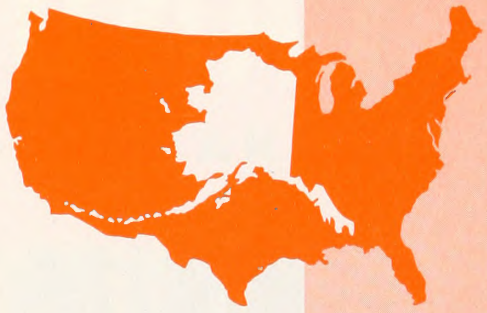
JANUARY 1953
Vol. 3 • No. 1

Our PUBLIC LANDS

BUREAU OF LAND MANAGEMENT

JANUARY 1953 • Volume 3, Number 1

OUR PUBLIC LANDS . . .



500 million acres of land that belong to us and to our neighbors and to all the people of the United States . . . public lands that are rich in natural resources . . . timber, rangeland, water, minerals, and land for every use . . . "active acres" that must be carefully and wisely managed for the welfare of the Nation . . .

As a forum for the exchange of ideas and information on the development, utilization, and conservation of the resources on public lands, this periodical contains no copyrighted material. If pictures or material are reprinted, a credit line should be given OUR PUBLIC LANDS *and the Bureau of Land Management.*

CARLOS WHITING, *Editor.*

Issued quarterly by

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
Washington 25, D. C.

The printing of this publication has been approved by the Director of the Bureau of the Budget, February 5, 1951

DEPARTMENT OF THE INTERIOR
Oscar L. Chapman, Secretary

BUREAU OF LAND MANAGEMENT
Marion Clawson, Director

CONTENTS

COVER

Watching a tree topping operation on the O and C timberlands of western Oregon, this group of BLM, other Interior officials and Congressmen learned at first hand many of t problems of land and resource management while participating in BLM's program c ference held at Billings, Mont., and Portland, Oreg., last July. Photo is by BLM Inf mation Officer Norma R. Hazeltine.

ALOGETON. Officials meeting last July at the BLM program conference in Billings studied land problems in the field, including ose relating to a halogeton control project in the Raft River area, Idaho.

BLM CONFERENCE HIGHLIGHTS

BLM program conferees learned about everything from phosphate fertilizer to Douglas-fir trees, from halogeton infestations to waterspreading systems, on their July 11 to 19 full-day sessions in Billings and Portland and their extensive field trips to Lander, Wyo., enroute to Butte, and to O and C lands in Dallas County, Oreg.

Bad weather in Wyoming dampened plans but not enthusiasm. Six-a. m. starts on field trips found all hands, including representatives from various Interior agencies and the Congress on board, and ready to learn more of BLM's administration of public lands. Loud speakers on the bus, in addition to conference kits containing study materials and illustrated itineraries, helped to inform visitors and BLM people alike of the land-management problems and projects visited.

Following the close of the conference in Portland, BLM delegates met in 2-day session to evaluate the conference. The following summary statement was prepared on the basis of recommendations made in these sessions.

A. The Resources

1. Federally owned land, range, forest, and mineral resources, under administration of BLM, are highly important in the economy of the West.

2. The demand for these resources has grown greatly in recent years and is sure to grow much more in the next few years.

3. Multiple use of these lands, on a sustained-yield basis for renewable resources and on a conservation basis for nonrenewable resources, or the

(Continued on page 12)

THE RED HARVESTER

by JOHN R. KILLOUGH, *Range Manager,* and HAROLD LE SUEUR, *Range Conservationist,* Region III

The red harvester has completely denuded 90,000 acres of grazing land in the Big Horn basin of Wyoming. Who or what do we mean by the red harvester? She is the lowly ant that King Solomon held up as an example of industry because she gathered food through the summer.

Recent investigations carried on by Bureau of Land Management personnel in Wyoming have disclosed that the red harvester ant is present in many of our western range areas in epidemic proportions. In the Big Horn basin of Wyoming, preliminary field surveys indicate that 30 percent of this basin is infested by these ants at the rate of 32 colonies per acre. These colonies average 18 feet in diameter. Calculated on the basis of area covered, number and size of colonies, there are 90,000 acres of bare ground as a result of these insects.

The red harvester is the most common species of ant found in the range States. This insect spends the daylight hours of the spring, summer and fall months in harvesting and carrying plant seeds into its mounds. The ants exist primarily upon these seeds gathered in the working area of the colony.

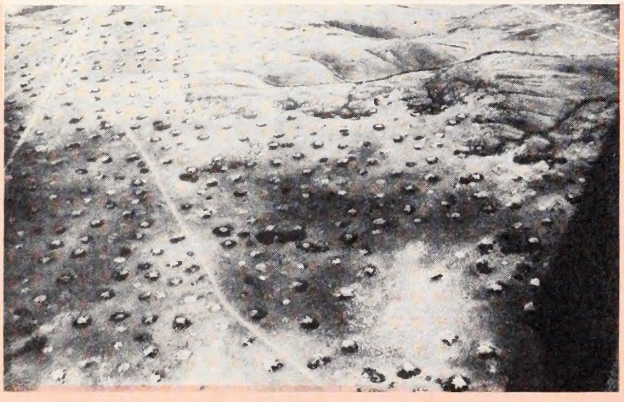
The number of ants in the colony is indicated by the size of the mound and the area which they strip of vegetation around the mound. The foraging area of the colony is approximately three times the radius of this cleared area and seldom overlaps the working radius of any neighboring colony.

It is estimated by some authorities that these ant dens contain about 10,000 individuals and the funnels extend from 6 to 10 feet into the ground. On the basis of 32 colonies per acre, there are 11 ants per square foot on heavily infested ranges. Unless these pests can be controlled, the best c range conservation practices will be inadequate t bring this land to maximum forage production.

Red harvester ants have caused the complete failure of numerous range reseeding experiments in the Big Horn basin by gathering up broadcast seed or cutting off young seedlings as they emerged. In one instance, an area of four sections was broadcast to crested wheatgrass by airplane, but these energetic insects gathered the seed almost as soon as it fell to the ground.

Most methods of controlling ants have not been

(Continued on page 14)



AERIAL PHOTOGRAPH. This area east of Manderson, Wyo., contains 23 harvester-ant colonies per acre, each with a cleared area averaging over 26 feet in diameter. One fourth of the total vegetation has been removed.

ANT MOUND. On the Big Horn basin, this ant hill is 1 inches high, 32 inches in diameter, and has a cleared area feet in diameter. The ants forage a distance of three times the radius of the cleared area.

BLM'S ARCTIC FIREGUARD

by JAMES A. BARR, *Chief,* Branch of Management Planning

From Washington, D. C., to Fort Yukon, above the Arctic Circle, is approximately 3,200 miles. The Bureau of Land Management administers lands and resources on half a billion acres between these two points. Fort Yukon, a small native village of about 500 inhabitants, nearly all native Indians, is the Bureau's northernmost outpost. One may well wonder why any Federal representative would be necessary in what many people may consider as an isolated village in the midst of the Alaskan wilderness.

One of the Bureau's important responsibilities in managing the public domain is its protection. It is our job to protect these forests for the time when the timber will be needed by industry and home owners. This demand has already manifested itself in Anchorage and Fairbanks, and Fort Yukon is only 140 miles from Fairbanks. The increasing importance of Alaska in the international defense picture also makes this task one of major importance.

At Fort Yukon the Bureau has its headquarters for the Fort Yukon forest district, containing approximately 69 million acres, one of several such districts administered by the Bureau in the interior of Alaska. During the fire season this agency employs Mr. Cliff Carroll, a native Indian, who in turn reports to Dick Quintus, stationed at Fairbanks.

During the hazardous fire-fighting period, Cliff is ready to report fires and guide locally recruited fire fighters—mostly Indians—to the fire, hoping he will arrive before it has burned deeply into the tundra or raced swiftly through inflammable stretches of brush into the forested islands which typify the Arctic timber stands.

Although this forest district is well known to Alaskans, many outsiders are astonished to learn that such a far-north land actually supports large forests of birch and spruce. The current station building, situated on the banks of the sprawling Yukon at its farthest point north, is part of the village of Fort Yukon. Here the common and sensible building material is native spruce logs.

It was quite a thrill for me to fly from Fairbanks to Fort Yukon in the Bureau's four-passenger Cessna—piloted by our expert pilot Robert R. Johnson, and in spite of feeling I was part of the cockpit, the trip was very smooth and eventful.

The mighty Yukon River knows few confining banks, spreading out into oxbows and sloughs until its lacework offers boat transportation to a vast surrounding area. So amazing is this network of sloughs that many prospectors have been lost, never to return after they failed to find the main channel. Cliff Carroll's fire truck is a 30-foot river boat powered by an outboard motor capable of hauling six men or one ton of supplies.

Fire-fighting equipment in this country is simple, adapted especially to ease in back-packing over long distances. The famous Pulaski tools—short-handled shovels, and water containers combined with hand pumps—are standard equipment used to combat wild fire in this district.

Usually fires are reported by incoming or local pilots if they are not seen by Mr. Carroll first. He gathers up a crew, depending of course on the size of the fire. If the fire is near the river, he goes by his motor boat. If it is out in the mainland, he lands by float plane on the nearest lake. As there are practically no roads in the country he has to cut trails as he goes along. At times he will make a fire break, but if a wind comes up this doesn't help very much. If a fire is too big for the small crew available, there isn't much he can do except to keep it from spreading. He and his hastily recruited crews have spent as long as a month at a fire.

The area surrounding Fort Yukon is mostly lakes, dry grass, and brush, so fires spread exceedingly fast. When a land fire is in progress Carroll usually keeps a place in contact with the fire but, if the weather closes in, this of course is impossible. In such cases he and his people often run out of supplies and have to live on small game and fish. After a fire, Cliff and his people usually go through the burned-out area.

At times he has to build rafts to get the equipment to the other side of a lake. Often he and his

(Continued on page 14)

BASIC TO RESOURCE MANAGEMENT . . .

SURVEYS IN PARAGUAY

by LUTHER T. HOFFMAN, *Regional Administrator, Region II*

Upon the request of the Paraguayan Government for technical assistance, I spent a 3-month detail in late 1951 and early 1952 in Paraguay under the Point 4 program as an advisor on land management problems.

In my final report to the Joint Commission for Economic Development, composed of Paraguayan and United States officials, I concluded that: "Basic to the acquisition or use of any public land is its identification by cadastral surveys. The legal determination of land boundaries, whether public or private, by means of reference to definite fixed points is essential to the development and management of the agricultural, grazing, and forestry resources with which Paraguay is so richly endowed."

While the original request of the Paraguayan Government called for advice on "the need for good public land laws, secure land titles, as well as information on grazing and timber uses," first hand acquaintance with the problems there indicated that the most important technical assistance that the Bureau of Land Management could render, at least as a beginning, would be in the field of cadastral surveys.

My final recommendations, which included the establishment of a coordination committee for mapping and land-use planning, were all approved by the Joint Commission as well as the Point 4 country program director and the United States Ambassador.

In order to appreciate the importance and need for cadastral surveys, some understanding of the land history of Paraguay is necessary. In 1900, following the disastrous Chaco War, 90 percent of the land of Paraguay belonged to the federal government, leaving less than 10 percent privately owned. In order to finance the new government in its job of rebuilding the country, a policy of selling government land to both private individuals and companies was adopted. This process once started was hard to stop, as evidenced by the results of a survey I made as to the amount of public land now owned by the Government of Paraguay.

This study which involved a somewhat detailed search of land records, both in the office of Institut de Reforma Agraria (IRA) and Publico Registro (Public Land Office), showed that less than 10 percent of the total area of Paraguay is now government (fiscal) land. Most of this amount is in small irregular pieces not suitable for any large scale government project such as colonization. In addition a large percentage of this amount is now in the courts with title uncertain. In view of the uncertainty both on the part of the government and private landholders, as to the amount of land with clear title and the obvious desirability of being sure of definite boundaries for such land owned or claimed, establishment of a cadastral survey system is most essential.

Because of the relative accuracy of land identification and the lack of dispute between the large and wealthy landholders in the western or Chaco region, my studies were largely confined to the eastern or "Oriental" part of Paraguay. This was at the request of the Joint Commission, inasmuch as the main problem of land use in Paraguay seemed to be concerned with the eastern part of the country. Average size of the eastern holdings are much smaller than in the Chaco. Even more important, the shape of the ranches or landholdings are very irregular, with the predominant shape that of long narrow strips. This is due to the very few access roads in most of Paraguay and the necessity of having one boundary border on a road or trail.

I did however make several trips to the Chaco and visited the Menonite Colonies in the northern part of the Chaco. Except for an area within approximately a 60 mile radius of Asuncion the capital, eastern Paraguay is largely covered with forests—with lumbering the main industry. However, as in the Chaco, cattle are also raised.

Recent land laws which were adopted in 1947 and 1948, when the present Colorado party came into power as a result of civil war in Paraguay favor the small or landless Paraguayan. Many of the former large landowners in this eastern

(Continued on page 13)

WESTERN GRASSLAND TOUR

by MILO H. DEMING, *Range Conservationist,* Region IV

My attendance at the Sixth International Grassland Congress last fall and my participation in the western tour which followed was a stimulating and enjoyable experience.

The Sixth International Grassland Congress was held August 17–23 at Pennsylvania State College, with governments of approximately 60 nations participating. The delegates—including Gerald M. Kerr, Chief of the Division of Range Management in the Bureau of Land Management—met to exchange ideas and discuss techniques on grassland management.

The sessions at the Congress were much like any technical conference, except for the realization that you were listening to internationally known authorities. The schedules were so tight that selections were necessary of what seemed most intriguing among the many section programs offered at the same hours. However, I was able to hear most of those which were about my primary interest.

On the western tour, I believe I was able to contribute something toward its success. There were men from 30 foreign nations included, all high-ranking scientists and all keenly interested in every phase of life in the ranch and range country. I had lived or worked in 7 of the 10 States we touched, so was able to answer many questions asked while we were traveling and when local committee men were not available for query. Time at stops often ran short because of the extra time necessary for French and Spanish translations of every explanatory, welcoming, or instructional speech that was made.

Since we were at new locations each day, the principal questions asked were about altitude, latitude, annual and warm season precipitation, temperature ranges, native trees, shrubs, and grasses, and the geological origin and PH rating of soils. Given this information, the visitors could correlate the differences or similarity with portions of their own countries and judge any adaptations accordingly.

From the type of people who made the tour, I can understand now why the trip was slanted so strongly toward agricultural demonstration, experimental and research station work, for these people were not administrators. I believe they obtained an understanding of the part played by the Bureau of Land Management from me and such men as John Keith, Floyd Larson, Tom Dudley, and Jim Speelman, who appeared on local committees.

(Continued on page 14)

BLOWDOWN. Billions of board feet of timber were toppled by winds of hurricane force last winter in the Pacific Coast Stat including BLM's O and C timberlands. Much of this timber can be salvaged.

TIMBER SALVAGE

BEETLE KILLED AND WINDTHROWN TIMBER WORTH MILLIONS TO BE SAVED AND USED

ast winter storms damaged and killed 9 billion board feet of commercial timber on forest lands in western Oregon, northern California, and southern Washington. An infestation of bark beetles in certain areas of these same forests is estimated to have killed or severely injured another billion board feet of green timber. One-third of this dead and dying timber is on the O and C and other forest lands administered by the Bureau of Land Management, chiefly in western Oregon.

Much of that third on BLM lands is too widely scattered to be salvageable, but at least 800 million board feet of windthrown timber and 400 million board feet of beetle-killed timber can probably be removed. This is enough to build 150,000 homes if made into building material.

Not only is it good management to save and use this timber in the interests of the national economy, it is essential to remove the mass of dead and dying timber which serves as a breeding place for bark beetles and becomes a tinder box threatening devastating fires.

Immediately after the storm damage in December 1951, the Bureau of Land Management—in cooperation with the Bureau of Entomology and Plant Quarantine, United States Forest Service, State agencies, and private interests—made a survey to determine the extent of the storm and beetle damage. The Bureau of Land Management made plans to accomplish the removal of killed and weakened timber, not only to save and use a valuable resource but to forestall forest fires and check the spread of bark beetles.

By December 1, 1952, about 130 million board feet of timber valued at $2,250,000 had been disposed of under the salvage program. On the basis of present estimates, salvage will continue for at least 4 years and will result in receipts of at least $20,000,000.

While BLM is emphasizing the sale of salvage timber on the O and C lands and adjacent public domain forests . . . with currently 75 percent of the total sales and 40 percent of the volume being salvage timber . . . sales of green timber in other areas are being continued in order to prevent distress in logging and timber processing communities dependent in large part on timber from Government land to support their economies.

JACKSTRAWS. Splintered and piled masses of trees complicated salvage timber cruising, access road construction, and logging operations.

FALLEN GIANT. This uprooted 250-foot tree gives an idea of the tremendous force of the winds.

TINDERBOX. Great danger of fire exists in the blowdown timber. Fires, once started, could spread through the crowns of adjacent undamaged forests—with tremendous losses.

BEETLE KILL. The bark beetle lays its eggs under the bark of trees, and its larvae tunnel horizontially from the parent's access burrow. Enough of these insects in one tree will cut off the flow of sap. The natural resistance of storm damaged and blown trees is reduced and these trees serve as hosts for the propagation of bark beetles. Patches of dying trees mar the hillsides—an indicator of a beetle epidemic.

active acres

ACTIVITY MAP

The remaining public domain in New Mexico is largely arid and semiarid. Some of the Bureau of Land Management's most effective demonstrations of erosion control, water development, and range improvement are to be found in this semiarid region. The Cornfield Wash project on the watershed of the Torreon, which flows into the Rio Puerco, a tributary of the Rio Grande, is illustrative of the possibilities in stopping destructive erosion, retarding runoff and building up the range.

In New Mexico, 14,384,000 acres of public land are administered in 6 grazing districts. An additional 400,000 acres of rangeland is outside grazing districts and leased under section 15 of the Taylor Grazing Act.

In grazing districts, approximately 890,000 head of livestock owned by 3,617 operators are grazed part or full time. On section 15 land, thousands additional stock, managed by 900 livestockmen, find forage.

Improvements constructed by BLM include: 60 detention dams, 75,000 cubic yards of dikes, 2,650 miles of fence, 31 springs developed, 118 wells dug, 444 reservoirs, and 140,000 linear feet of water-retarding construction. Grass reseeding has been accomplished on 264,000 acres and 72,000 trees have been planted.

In addition to grazing, public lands in New Mexico supply juniper posts for corrals, fences, and other ranch construction and piñon pine for fuel.

Approximately 9,370 oil and gas leases are currently in force on public lands in New Mexico, and exploration and development of oil and gas resources is increasing. Another mineral of value from public lands in the State is potash.

Cadastral surveys by the Bureau are basic to all leasing and development activities, establishing and marking on the ground boundaries of public land. Other land uses requiring public land surveys are small tracts leased and sold for home, cabin, and business sites, and desert land and homestead entries.

WATER

Water wells discovered by oil men and geophysical crews while making test drills on public lands are valuable byproducts of a new code of ethics voluntarily drawn up and accepted by industry.

Early in 1948, because of considerable conflict of interests between oil exploration crews and private landowners and to some extent the Bureau of Land Management, it seemed that a system of regulation of seismograph prospecting would be necessary. At the suggestion of Albin D. Molohon, the Bureau's regional administrator at Billings, Mont., a meeting was called at Casper, Wyo., June 4, 1948, by the Rocky Mountain Oil & Gas Association.

At this meeting, which was attended by approximately 50 oil and geophysical people representing 75 companies, a set of voluntary regulations or code of ethics was worked up and a committee of oil people was formed to investigate any and all complaints which might be received from actions of the geophysical crews. In this code of ethics was the stipulation that it should be the duty of the field crews to report to the Bureau of Land Management area offices any underground water which was located as a result of their activities.

From that time forward, the seismograph work has resulted in considerable information being given to the area offices relating to location of underground water and occasional artesian flows which have resulted from the drilling operations of the geophysical crews.

One such artesian well, brought in near Baggs, Wyo., was drilled to a depth of approximately 2,200 feet and contained approximately 1,600 feet of casing. This well was capped and turned over to the Bureau of Land Management free of charge by the Phillips Petroleum Co.

The Bureau of Land Management first placed the well under public water reserve and then constructed a large earthen dam below it. This has resulted in a good sized permanent lake which now provides water for livestock and game from the surrounding range. It is expected that it will eventually serve as a nesting area for water fowl and will also be used by upland game birds such as sage grouse.

This water is especially valuable in late fall and winter after other sources of water from nearby irrigation projects have dried up. It will be only occasionally that wells of this type can be utilized by the Bureau of Land Management, but it does offer upon occasion an opportunity to greatly improve the utilization of the Federal range and wildlife habitat.

RESEEDING

Range reseeding under the halogeton and regular soil and moisture conservation programs reached a new area record in 1952. At the close of the work season, a total of 238,000 acres of depleted BLM land had been reseeded to hardy perennial grasses. Favorable fall weather extended the usual short planting season enabling contractors and Bureau forces to exceed anticipated acreage goals. With average moisture conditions prevailing during the spring and summer months of next year, the new reseedings should be ready for grazing use at the end of the second growing season. The largest acreages of new range reseedings are located in Region I, II, and IV.

The 238,000 acres of new grass seedings completed in 1952 will produce a net increase in forage volume of approximately 80,000 animal unit months, commonly referred to as AUMs. Before reseeding, these rangelands had an average grazing capacity of about 20 acres per AUM. Added available forage on the reseedings will increase the grazing capacity to 3 acres per AUM. In addition to the production of new forage, the reseedings also perform a more effective job in tying down highly erodible soils typical of the range country.

BARK BEETLE

There is no known method of spray control to combat effectively Douglas-fir bark beetles. Salvage is the only practical answer.

In their attack, beetles bring with them spores of wood-decaying fungi which develop rather rapidly in the conducting tissues of the trees, blocking the transpiration stream, thus assisting the beetles in girdling the tree—even though the attacking beetles fail to develop successful broods. Other than by entrance through dead or broken limbs and twigs, beetles are the only other natural means of inoculating trees with fungi.

EXCHANGE

New Mexico and the Federal Government exchanged certain lands last fall to make more effective protection for the many downstream land and water users in the Penasco and La Luz drainages. BLM conveyed to the State title to 70,489 acres of Federal land in Colfax, Union, Harding, and Quay Counties. In return, the State gave the Government 15,377 acres of land of equal value in the strategic headwater areas of the Penasco and La Luz drainages in the Lincoln National Forest.

Additional benefits to the State in the exchange include the consolidation of State-owned lands in northeastern New Mexico, the accrual of additional revenue to State schools, and relief from fire protection and other responsibilities on the partly timbered conveyed lands.

RESOURCES

Resources for Freedom, better known as the Paley Commission report, bids fair to be a best seller among Federal Administrators. This five-volume report to the President, made by his Materials Policy Commission, presents in volume I, Foundations for Growth and Security, a general outline of the materials problem.

The major premise of the report as stated on page 3 of volume I is: The over-all objective of a national materials policy for the United States should be to insure an adequate and dependable flow of materials at the lowest cost consistent with national security and with the welfare of friendly nations.

Of primary interest to BLM is the discussion of minerals and also that on timber, with recommendations made in these subjects.

In subsequent volumes the Commission discusses the following topics: Volume 2, The Outlook for Key Commodities; volume 3, The Outlook for Energy Sources; volume 4, The Promise of Technology; volume 5, Selected Reports to the Commission.

Pertinent passages from the complete report will be quoted, if space permits, in subsequent issues of OPL. However, every administrator and division chief is urged to read volume I and to use the other four volumes as primary source books for the latest available information on these subjects.

The impact of the report to date cannot be estimated. However, it is interesting to note that in the short time since it was published, the Paley Commission Report has brought forth editorials in Alaska as well as in the States. It is safe to predict that on the basis of this report, new policy decisions in at least two fields, those of minerals and forest management, will be proposed.

(Continued from page 3)

use of the same tract at the same time for several purposes, is highly desirable and should be facilitated. Such of the lands as are not susceptible of multiple use will be considered for ultimate private ownership through sale or exchange.

4. These resources should be protected against destruction and waste, should be developed to the extent necessary to obtain their use, and should be made readily available for use by the public. To the maximum extent practicable, development and use into productive enterprises should be by private initiative and capital.

5. The problems of use of Federal land resources are complex, particularly in relation to other uses. All available assistance and technical advice from other Federal agencies and from elsewhere should be used in obtaining full basic data for disposition or administration of the federally owned resources.

6. The full productive capacity of the federally owned resources has not yet been developed, but it is highly desirable to develop that capacity to the economic limit.

7. Substantial further investment of Federal funds is necessary if federally owned resources are to be developed to their maximum economic limit as part of the development of the particular areas in which these public lands are located. This is necessary even though such development into productive enterprises will largely be by private initiative and capital.

8. Additional amounts are needed annually for administration in order to make federally owned resources fully available for use and development by private effort.

B. The Programs

1. The Bureau should continue to seek maximum efficiency—maximum output at lowest cost—in its day-to-day operations.

2. The Bureau should decentralize its operations as far as practicable both to aid in achievement of efficient operation and as a part of public administration for maximum public service.

3. The area administration principle is sound and should be extended as rapidly as possible, both in the interests of economy and as a means of promoting maximum multiple-purpose use of resources.

4. BLM should seek the fullest development of the resources it administers, consistent with sound conservation practices. It should seek to increase the productivity of those resources on a sustained yield basis, so as to provide for their maximum and continued use by authorized users.

5. In furtherance of its broad objectives of conservation—increased productivity, maximum utilization, selective disposal—BLM should seek advice and assistance from qualified Federal, State, and local agencies and institutions both public and private. To the fullest extent possible, this advice should include duly authorized or elected representatives of the individual users—such as the district advisory boards.

6. The Bureau should analyze carefully and fully its costs of operation, its sources and amounts of revenue, and the distribution of the revenue, to insure that the general public interest is fully protected.

7. The Bureau should seek, through regularly established channels, appropriations sufficient to attain the objectives previously outlined.

8. The Bureau should seek, through regularly established channels, any legislation needed for attainment of these broad objectives.

LAND USERS' Q and A Corner

Q. What is an "approved unit or cooperative plan" under which holders of Federal oil and gas leases can combine?

A. Under the law, a group of companies or individuals holding leases can agree to pool their lands, drill only such wells as are necessary to obtain the greatest ultimate production, and share in proportion to their acreage holdings. A unit usually involves an entire oil structure, and limits the number of wells to be drilled in the interests of conservation . . . since a few wells, pumping slowly, will ultimately get more oil from the structure than numerous so called "offset" wells pumping at capacity.

Q. Why is neither domestic livestock raising nor grassland farming considered "agriculture" under the homestead law?

A. It is true that in a general sense these activities are agricultural, but the homestead law contemplates that land in a homestead entry is to be tilled, and the feasibility of successful cultivation and raising of crops not native to the area is one of the factors in determining whether land is suitable for homesteading. Where the required amount of land is tilled and seeded to crops other than *native* grasses and the crops are harvested and used as grass silage or hay for livestock feed, the cultivation requirement of the homestead law is satisfied.

This corner will answer selected questions directed to the editor of OUR PUBLIC LANDS

...VEYS IN PARAGUAY

(ontinued from page 6)

part of Paraguay say they are not sure where their boundaries are, with much of the land they claim being used by so-called squatters whom they are unable to displace. Many of the titles are therefore in dispute and in the hands of local courts throughout eastern Paraguay.

It was evident as a result of several field trips and studies I made that positive and definite identification of property lines was essential before any major land-use program could be carried out in Paraguay. At various times in the past, attempts had been made to establish a cadastral system of surveys in Paraguay. However, each ailed because of the lack of necessary cooperaion and suppport of landowners. Understanding as to what such a system was and what it would accomplish had not been achieved.

One of the main problems in Paraguay concerning land use is the large percentage of the total population living in the Asuncion trade area. Within a 60-mile radius of the capital, which has a population of about 200,000, more than 60 percent of the total population—about 1½ million—reside. The average landholding in this concentrated area is about two to three acres, with many of the landowners not residing on or working the d.

t was the announced policy of the Government and of IRA (Institute of Agrarian Reform) to resettle many of the landless and small-land holders from this overpopulated area by means of large colony projects in the southern part of eastern Paraguay. There are some 200 colonies scattered throughout Paraguay with a large percentage of the number settled by foreigners who were encouraged to come into this country from other parts of the world. The major inducement for such colonization was free land and freedom from taxes. Due to poor location surveys, these colonies were unable to give clear title to the families who worked so hard to clear the forest in order to plant crops as a basis for even a meager subsistence economy. All officials of IRA having anything to do with colonization agreed that identification of property lines based on an adequate but simple survey system was essential to any additional colonization projects.

In flying over the country from east to west and north to south, it would appear that at least 50 percent of the total land area is covered with forests. These, however, are not forests as we think of them in this country but more in the nature of jungles, with a large collection of miscellaneous types of trees and underbrush. To get out the various types of hardwood, it is the practice to select individual trees and in order to t those out to hack through the underbrush temrary trails for the oxcarts.

As nearly all of the forests were privately owned or so claimed, here again it seemed essential that, from the standpoint of the Government as well as the individuals who claimed these large areas of forested lands, steps be taken to properly identify and mark property corners and boundaries. Colonization projects, and for that matter any form of land development, has to start with clearing the forests the same as was done in much of the early development of the United States.

While large areas of potential grazing land appeared to be unused, further inquiry indicated there were reasons such as inadequate or stagnant waters largely responsible for such nonuse.

My studies and inquiries indicated that the grazing industry in Paraguay, while susceptible of considerable improvement, was nevertheless farther along than the development and utilization of the forested lands.

It seemed to be the consensus of all those qualified to have an informed opinion on the subject that a combination of forest land, livestock raising, and limited amount of agricultural products was the ideal small as well as large ranch holding for Paraguay. One so-called "model colony" at Pirareta, with about 15 acres per family unit, seemed to provide the ideal arrangement in the way of a diversification for agriculture, livestock, and woodland products.

My specific recommendations made to the Joint Commission in my progress report were that the Bureau of Land Management, through the Point 4 program, assign two cadastral survey technicians—one as a cadastral engineer and the other as a technician in the field of survey and land records. Later technical services such as would be provided by land classification, land colonization, and land lawyers would follow.

Subsequently George W. Johnson, a BLM surveyor from the Salt Lake City regional office, and Walter E. Beck, a land management and records specialist from the Bureau's Alaskan regional office, were sent to Paraguay on technical assistance projects. These men are now helping to solve basic land-management problems.

As indicated in my final report to the Joint Commission, I found all of the representatives of the various local government agencies most warmhearted and understanding. I received the fullest cooperation in spite of my lack of knowledge of the Spanish language, with which everyone there was patient.

Prior to leaving Asuncion, I had the privilege of a conference with President Chaves, who is largely responsible for the very liberal land laws now in effect in Paraguay. He expressed to me his appreciation for the material assistance given to his country by the Institute of Inter-American Affairs during the past several years, as well as the Point 4 assistance now made possible by the Technical Cooperation Administration which is being counted on as most important and helpful for substantial improvement in the economy of Paraguay.

THE RED HARVESTER

(Continued from page 4)

satisfactory under range conditions. Sodium cyanide, calcium cyanide, and carbon bisulfide are expensive and do not result in good kills. Mechanical means such as dynamite and flooding have not been effective. Promising results have been had with the new chemical formulas such as chlordane, dieldrin and aldrin. In some instances, kills as high as 79 percent have been achieved with one application of poison. Experiments with these poisons were begun during the summer of 1950 near Manderson, Wyo., by the Bureau of Land Management. These studies are being continued, since the results obtained thus far are promising, but not conclusive.

These range spoilers have already stripped 6 percent of the Big Horn basin rangelands and are taking most of the seed produced on 30 percent of the total 1,500,000 acres. No estimates are available for other areas where these pests are equally as numerous and destructive. This is truly a serious and real range problem. If practical and economic control methods through the use of chemicals can be developed, further damage may be prevented and range forage greatly increased.

BLM'S ARCTIC FIREGUARD

(Continued from page 5)

crew have to pack hose pumps as far as 5 miles through thick brush and then are not able to get to a fire or away from one.

The weather in Fort Yukon varies from 70° below zero in winter to 100° above in summer. On my return from Alaska this year, many people were amazed to hear that Fort Yukon, above the Arctic Circle, was the hottest place I had been in this year, as the day I was there the thermometer registered 100°. Sometimes in winter it stays 50° below zero or colder for weeks at a time. At such times Cliff and his family can do little but sit at home and stoke the fires.

When a wild fire threatens to become too large for the hastily recruited crews, Cliff radios through the Civil Aeronautics radio to Dick Quintus at Fairbanks for more fire fighters, who are dispatched on chartered aircraft, flying the men directly to Fort Yukon air strip in a 2-hour flight. Supervision then becomes the job of the Fairbanks foresters who arrive with the men.

Such enlarged fire-fighting crews are organized into eight-men groups each with his own foreman. These crews and their equipment, which includes gasoline-powered pumper units, light-weight portable radio, camp cooking materials, and sleeping bags, are ferried from the Fort Yukon air strip to within easy distance of the fire by chartered float-equipped airplanes. The Bureau's light airplanes carry a fire boss over the fire and radio communication to the foreman and crews on the ground affords direct control of the at on the fire. Light planes bring supplies alm daily, dropping them in strong bundles to t crews.

The number of fires and acreage burned in the Fort Yukon district this past season fortunately was very light. However, the summer of 1950 saw forest fires in full swing in the Yukon River valley and 1,778,000 acres of ground cover, including timber, firewood, and valuable game area were destroyed. Burning within a few hundred feet of Indian homes, it threatened to destroy the small town of Fort Yukon before it was brought under control a whole month later.

The most important cause of forest fires is carelessness on the part of native trappers and campers who fail to observe proper precaution i building camp fires and in seeing that they a thoroughly out before leaving them.

Mr. Carroll has lived in this part of Alaska all his life. While he has been in all of its principal cities he has never been "outside," as the saying goes. He knows every river or creek adjacent to Fort Yukon, and well he should, for he started trapping at the age of 16 and has been doing so every winter since. He was first employed by the Bureau in 1943. He is married and has eight children. His livelihood in Fort Yukon depends largely on trapping. The main furs are mink, marten, lynx, fox, beaver, and muskrat. Getti his moose in the fall is a very important iten it means that he and his family will have meat most of the winter.

Just the other day a letter came from Cliff telling me he had gotten his moose for this winter and had started out on his trap lines.

WESTERN GRASSLAND TOUR

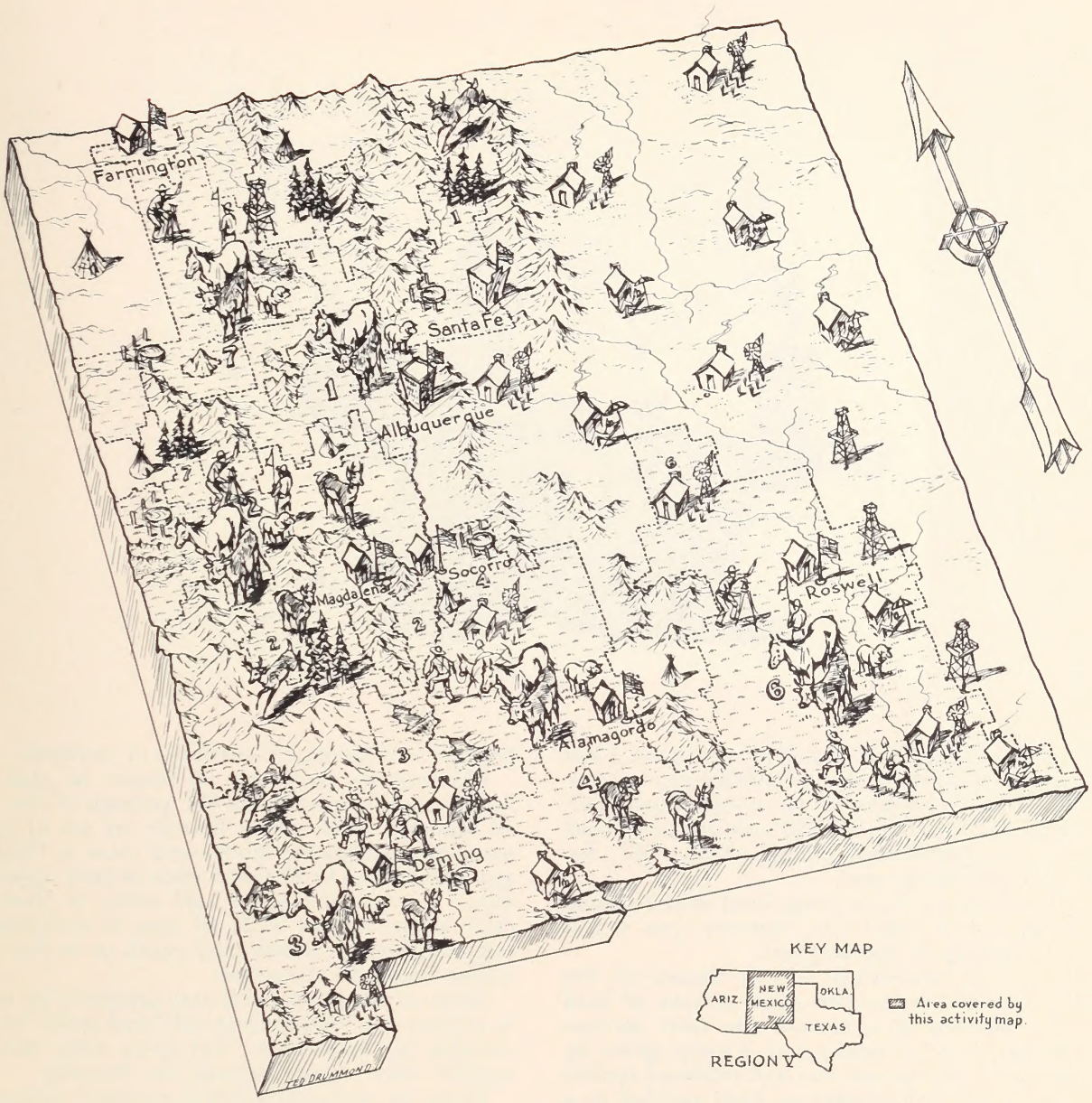
(Continued from page 7)

Although I have no foreign language, I soon found out that there are at least two things that override international limitations—the Latin nomenclature for plants, and the tunes of many folk songs. Further, a common interest and expressive sign language often overcame any diffi culties of speech.

A. T. Semple, Dave Savage, and I were each in charge of a Pullman car, so we had a better than usual chance to get well acquainted with the group, as they were rotated twice.

Planning of the tour was excellent. There was very little duplication, and certainly no wastage of time. Col. E. N. Wentworth and William McGinnies carried all the schedule through on time and seemed to have anticipated every essential detail. The hospitable welcomes we received at every stop were unquestionably genuine and made a deep impression on the foreign visitors I am sure that some lasting friendships and go feeling toward this country and its people we generated.

NEW MEXICO LAND-USE AND ACTIVITY MAP

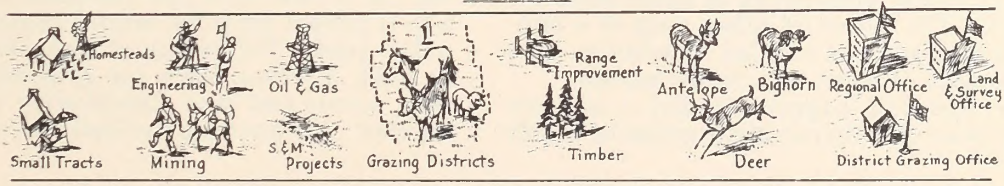


KEY MAP

REGION V

Area covered by this activity map.

LEGEND

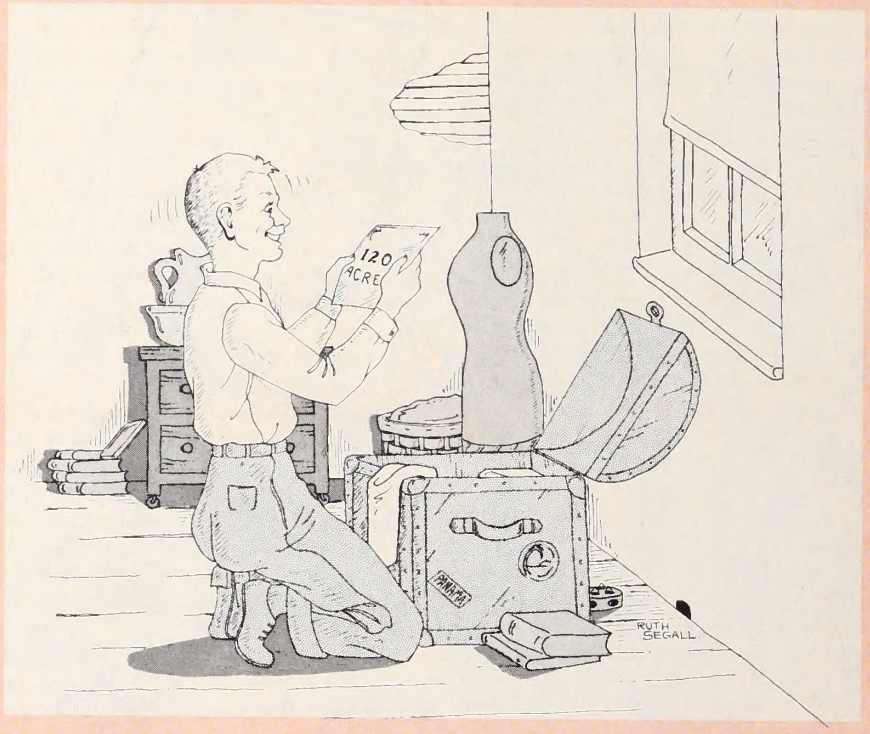


For comments on this map, please see page 10

U. S. GOVERNMENT PRINTING OFFICE : 1953 O—235644

For sale by the Superintendent of Documents, Government Printing Office Washington, D. C. — Price 15 cents (single copy).
Subscription price 60 cents a year, 15 cents additional for foreign mailing.

IT'S THE LAND LAW



If you have heard that somehow or other a piece of scrip or a military bounty entitles you to some public land, you might let out a warwhoop upon finding a land warrant for 120 acres issued to your great-great-grandfather along about 1854 for service in an Indian war.

Before dashing down to the land office to claim a homestead or cabin site, however, you would want to read up on the land law.

The newly established United States—as the Colonies had done earlier—gave grants of land to war veterans as a reward for their service.

Another form of land grant is scrip, given by Congress to individuals who had rendered special service to the Government or were entitled to a selection of public lands in lieu of lands taken for public use. The holder of either scrip or a military land warrant was entitled to selection of a specific acreage of lands open to settlement.

No one who just happens to find a military bounty or piece of scrip can use it unless he is able to show title through inheritance or purchase.

Military warrants can no longer be used to acquire public land, since the passage of the act of March 2, 1889, which limited the use of such warrants to Missouri lands—and there is little if any public land in Missouri open to such application. A warrant may be used today in place of cash, at the rate of $1.25 an acre, to commute a homestead entry, desert land entry, or to pay for public land sold at auction.

Scrip on the other hand may generally be used to acquire any "nonmineral, surveyed public lands suitable for settlement," but some scrip can be applied only to land suitable for farming.

There are, perhaps, military warrants outstanding for a total of a few thousand acres. There also is unused scrip for several thousand acres of public land. Before any of these documents can be used, however, there are problems of ownership, survey and land classification that must be hurdled . . . knowing the land law will help.

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
WASHINGTON 25, D. C.

OFFICIAL BUSINESS

PENALTY FOR PRIVATE USE TO AVOID
PAYMENT OF POSTAGE, $300
(GPO)